

**EUPHORIANA GAHAN: A REDEFINITION WITH NEW NAME
COMBINATIONS AND A NEW CANADIAN SPECIES**

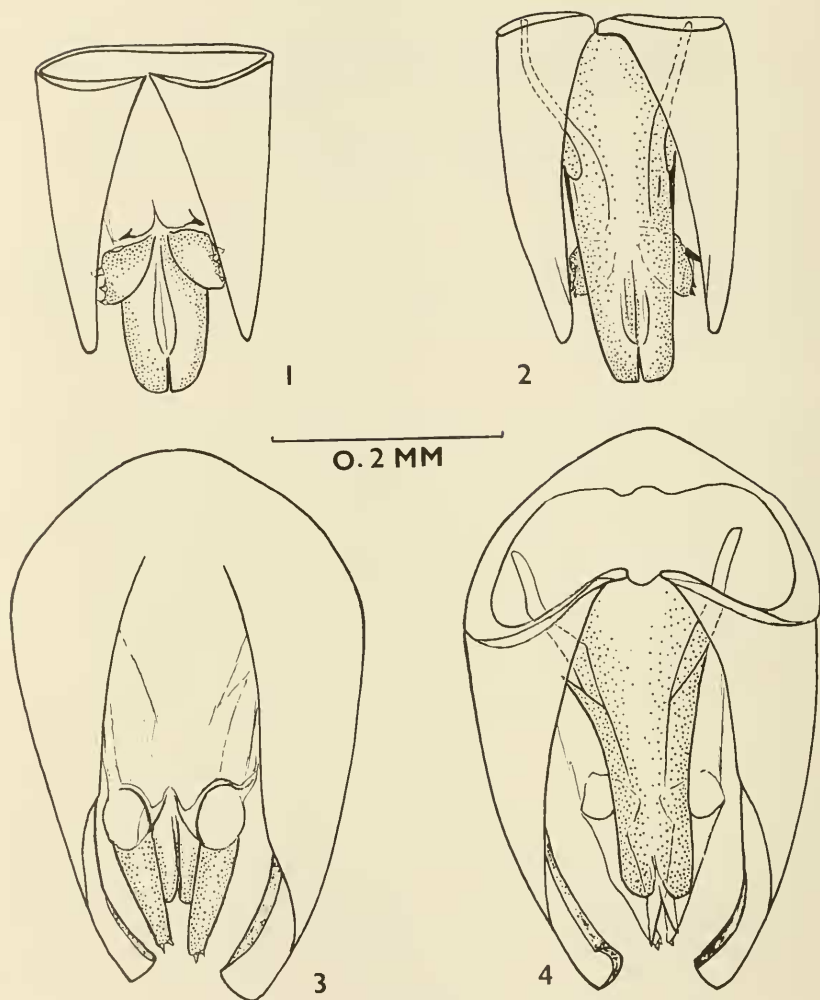
(HYMENOPTERA: BRACONIDAE: EUPHORINAE)

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ABSTRACT—*Euphoriana* Gahan is redefined to include *Leiophron occipitalis* Mues., *L. tuberculatus* Mues., and *L. maculipennis* (Ash.). *E. muesebecki*, n. sp., an associate of the mirid *Lopidea marginalis* Reut., breeding on *Spirea latifolia* (L.) is described from Ontario. The five known species of the genus north of Mexico are keyed.

Euphoriana Gahan, 1913, is a monobasic genus distinct from *Leiophron* Nees (= *Euphorus* by Muesebeck, 1958) chiefly by absence of the cubitus (Muesebeck, 1936). *Leiophron* includes forms similar to the type species, *L. apicalis* (Curtis) Haliday, and others with reduced venation of the fore wing. Muesebeck (1936) recognized this heterogeneity and questioned whether *Euphoriana* could be maintained as distinct from *Leiophron* by its effaced cubitus. The Nearctic species of *Leiophron* with reduced venation are *occipitalis* Muesebeck, *tuberculatus* Muesebeck, and *maculipennis* (Ashmead). Because of male genitalic and other anatomical characters it is proposed here that these species belong to *Euphoriana* rather than to *Leiophron*. This concept results in two relatively homogeneous genera and supports the taxonomic validity of *Euphoriana*. One new species of *Euphoriana* is described. Presumably, because of effaced venation, the phylogeny of *Euphoriana* is more advanced than that of *Leiophron*. Species of both genera are specific endoparasites of mirid nymphs and their final instar larvae are superficially alike. The mating behavior of *E. maculipennis*, however, is markedly different from that reported for *Leiophron* spp. by Waloff (1967). The biology of *E. maculipennis* will be reported in a subsequent paper.

Species of *Euphoriana* are readily recognized by a quadrate or subquadrate head, prescutal sutures effaced or only partly impressed, tergite 1 not much wider apically than basally, and incomplete development of the veins of the middle part of the fore wing. The wings of each species are shown (figs. 5–14). *E. tuberculatus* differs slightly from this diagnosis by a head more rectangular than quadrate. A major difference between *Euphoriana* and *Leiophron* is found in the male genitalia. A representative of each genus is illustrated (figs. 1–4; basal ring of phallus omitted). The chief differences of taxonomic interest are listed as follows (phallic nomenclature, Snodgrass 1941).



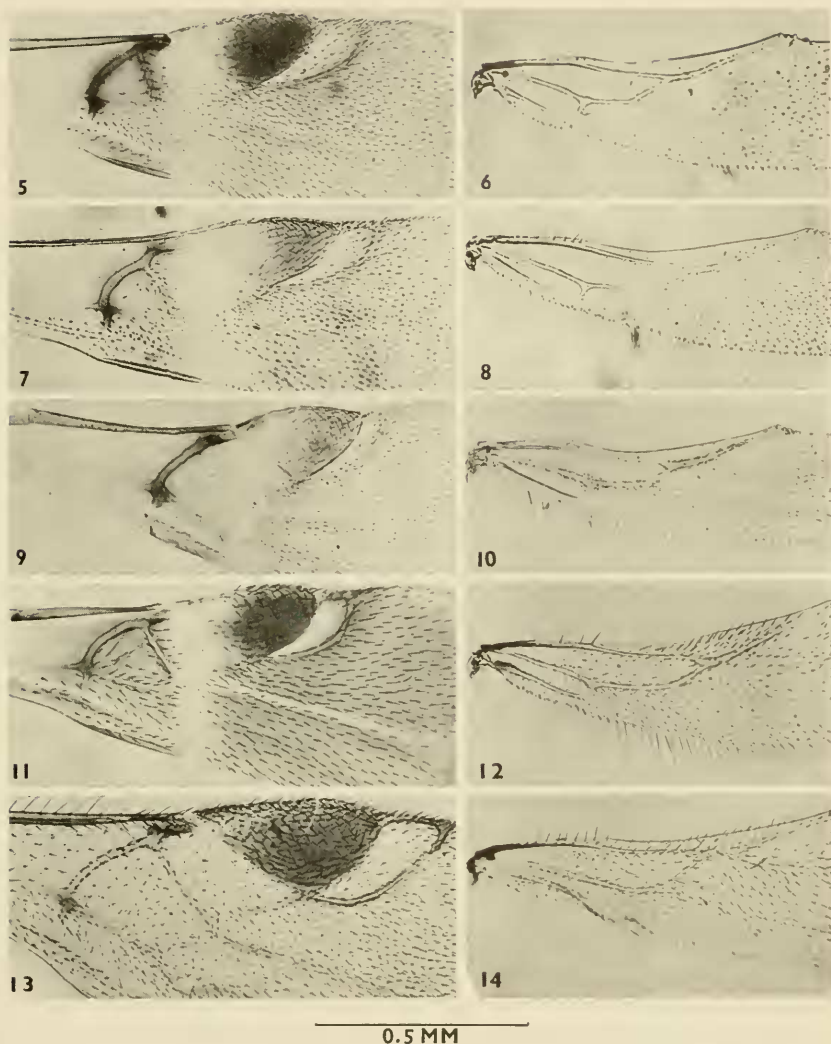
Figs. 1-4. Phalli of *Leiophron* and *Euphoriana* spp.: 1, *L. pallipes* Curtis, ventral; 2, same, dorsal; 3, *E. maculipennis* (Ashmead), ventral; 4, same, dorsal.

Euphoriana

1. Dorsum of basal parts of parameres prolonged distally.
2. Parameres longer than aedeagus, apices curved medially to enclose aedeagus and digitae partly or completely.
3. Digitae narrow, upright, reaching apex of aedeagus.

Leiophron

- Dorsum of basal parts of parameres not prolonged distally.
- Parameres not longer than aedeagus, not forcep-like at apices.
- Digitae broad, not reaching apex of aedeagus.



Figs. 5-14. Fore and hind wings of *Euphoriana* spp.: 5, 6, *maculipennis* (Ashmead); 7, 8, *muesebecki*, n. sp.; 9, 10, *uniformis* Gahan; 11, 12, *occipitalis* (Muesebeck); 13, 14, *tuberculatus* (Muesebeck).

The phallus of *Euphoriana* is longer and wider than that of *Leiophron* in proportion to body size. This is shown in table 1 with segment 1 of the tarsus of the posterior leg as a measure of body length.

A review of Nearctic *Leiophron* is in progress, and will contain a revised diagnosis of the genus.

TABLE 1. The size of the phallus of *Euphoriana* and *Leiophron*

| Taxon | Length in mm. | No. Specimens | Posterior Tarsal Segment 1 Length | Paramere of Phallus | | Ratio of Paramere | |
|---------------------------|------------------|------------------|--|---------------------|---------------------|--------------------------------|---|
| | | | | Width | Length | Basal Width to Length | Length to Posterior Tarsal Segment 1 |
| <i>Euphoriana</i> | | | | | | | |
| <i>uniformis</i> | 1.8-2.4 | 4 | 0.29 (0.24-0.32) | 0.20 (0.17-0.24) | 0.31 (0.30-0.33) | 0.7 | 1.1 |
| <i>occipitalis</i> | 2.0 | 1 | 0.30 | 0.20 | 0.30 | 0.7 | 1.0 |
| <i>tuberculatus</i> | 2.0 | 1 | broken | 0.26 | 0.40 | 0.7 | — |
| <i>muessebecki</i> n. sp. | 2.4 | 1 | 0.17 | 0.27 | 0.38 | 0.7 | 2.2 |
| <i>maculipennis</i> | 1.8-2.2 | 10 | 0.26 ± 0.03* | 0.20 ± 0.04 | 0.34 ± 0.06 | 0.6 | 1.3 |
| <i>Leiophron</i> | | | | | | | |
| <i>pallipes</i> Curtis | 2.4-3.0 | 25 | 0.33 ± 0.04 | 0.16 ± 0.04 | 0.18 ± 0.02 | 0.9 | 0.5 |

* standard error.

The type of the new species of *Euphoriana* described here is in the Canadian National Collection, Ottawa (CNC).

Euphoriana Gahan, 1913

Euphoriana Gahan, 1913, Proc. U.S. Nat. Mus. 46:433, pl. 39, fig. 1. Type-species: *Euphoriana uniformis* Gahan.

Generic characters.—Head usually quadrate or subquadrate, usually much wider than thorax, margined or immargined behind; prescutal sutures faint, incompletely effaced or absent; antescutellar groove divided by two or more carinae; fore wing hyaline, or with pale or dark maculae; stigma deep; first abscissa of radius obliterated or punctiform; cubitus, intercubitus, recurrent vein distinct or absent; sensillae of parastigma usually 4–6, of second abscissa of radius 2–5; radial cell very short; submediellan cell complete or incomplete; tergite 1 of gaster only slightly wider at apex than at base; male genitalia as in figs. 3–4; ovipositor subexserted.

KEY TO NEARCTIC SPECIES OF **Euphoriana**

1. Cubitus entirely absent; prescutal sutures faintly impressed .. **uniformis** Gahan
Cubitus present to some extent; prescutal sutures obliterated or impressed anteriorly only 2
2. First cubital and first discoidal cells completely closed; occipital carina complete medially; recurrent vein distinct **occipitalis** (Muesebeck)
First cubital and first discoidal cells open behind; occiput immargined; recurrent vein absent 3
3. Submediellan cell incomplete, nervellus lacking; wings hyaline
..... **tuberculatus** (Muesebeck)
Submediellan cell complete; wings maculate 4
4. Antenna short, about 2.0 times as long as length of head, 15-segmented, flagellum widest near penultimate segment; face finely hairy; lower cheek not as wide as transverse diameter of eye **maculipennis** (Ashmead)
Antenna longer, 3.0 times as long as length of head, 18-segmented, flagellum widest about segment 14 of flagellum; face with short, sparse hair chiefly between eyes; lower cheek as wide as eye **muesebecki**, n. sp.

Euphoriana muesebecki, n. sp.

Holotype.—Female, (CNC 10739) reared 25-V-1967, C. C. Loan, at 21°C in the laboratory from *Lopidea marginalis* (Reut.) collected 10-14-VII-1966, 3 miles west of Belleville, Ontario, Canada, feeding on

Spirea latifolia (L.).

Length 2.4 mm. Light reddish; antennae dusky.

Head 0.8 times as long as wide; POL (postocellar line) 0.6 times as long as OOL (ocular-ocellar line); anterior margin of lateral ocellus slightly behind posterior margin of eye; face 0.7 times as wide as long, subequal to width of upper cheek, not quite as wide as eye; frons, vertex, cheeks glabrous, smooth, polished; eye 0.7 times as wide as long; scape as long as flagellar segment 1, pedicel, 0.4 times, segment 2, 0.8 times; segment 2 of flagellum 0.7 times as wide

as scape; cheeks distinctly margined behind, carina incomplete medially for a distance of width between eyes behind.

Thorax almost 0.7 times as wide as head; mesonotum glabrous, smooth, polished; antescutellar groove broad, shallow, divided by six closely-spaced carinae; scutellum about as high as wide at base; mesepisternum glabrous, indistinctly aciculate; propodeum rugulose reticulate, exareolate, as long as wide, its posterior face flat, moderately declivous; radial cell 0.2 times as long as stigma; first abscissa of radius punctiform; stigma 0.4 times as wide as long, pale brown on wing margin 0.5 times its length, remainder hyaline; nervellus very short, marginal cilia 2.0 times as long; basal abscissa of basella 2.0 times as long as apical abscissa.

Tergite 1 striate, 2.2 times as long as wide at apex, almost 0.7 times as wide at base as apex.

Allotype.—Male, data as cited for holotype but reared 22-V-1967. Essentially like the female holotype except for the following: antennal segments 19; tergite 1, 2.6 times as long as wide at apex; eye slightly wider than lower cheek; striae of tergite 1 somewhat wavy, not uniformly straight; face only slightly deeper than wide between eyes; OOL 2.0 times as long as POL.

Remarks.—*E. muesebecki* is very similar to *E. maculipennis* but is recognized by characters given in the key to species. The long phallus, more than 2.0 times as long as first tarsal segment of posterior leg (table 1), may be distinctive. A series of specimens is required to determine the variation of this and other characters.

ACKNOWLEDGMENTS

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